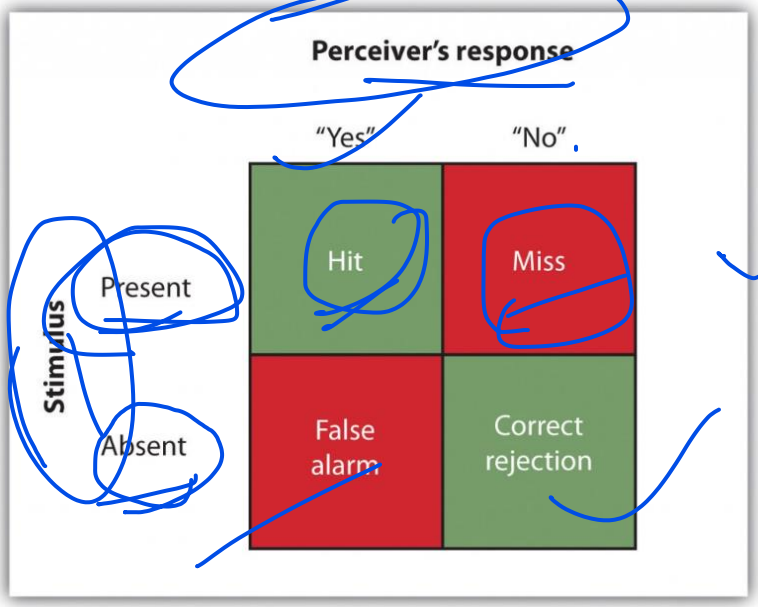
Signal Detection Theory

Signal detection theory is a mean to identify the signal and discern it from the noise (Presence of other mess which can affect the decision making). The detection of the signal depends on many factors like- experience, expectation and physiological state (e.g., fatigue)

These factors determine how we will detect the signal and what would be our threshold level.

Example - Parents who are tired and exhausted may detect the whimper of the sleeping baby and fail to recognize the loud noise like buzzer of dryer.



Sensitivity and Response criterion

Sensitivity refers to how hard or easy it is to detect that a target stimulus is present from background events. The assumption behind this criterion is that, although the physical stimuli in the situation the noise (N) and the signal plus noise (SN) are nominally constant, their sensory effect vary from presentation to presentation.

In response criterion a particular magnitude of central neural effect is selected, then the response is made for signal.

SHOUT
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IT

When central neural effect equals or exceed the criterion the signal is detected and “no signal” whenever it is less than the criterion.

Bias

The extent to which one response is more probable than other.

Subliminal Perception

Subliminal perception occurs whenever stimuli presented below the threshold or below the level of awareness, are perceived.

A stimulus reaches a physiological threshold when it is strong enough to excite sensory receptors and send nerve impulses to the brain: this is an absolute threshold. A message below that threshold is said to be subliminal: we receive it, but we are not consciously aware of it. Therefore, the message is sensed, but for whatever reason, it has not been selected for processing in working or short-term memory.